



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/234,518

01/21/1999

IN TAE HWANG

K-078

5980

7590

02/07/2005

Fleshner & Kim, LLP
14500 Avion Parkway
Suite 125
Chantilly, VA 20151

EXAMINER

TSEGAYE, SABA

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/234,518

Applicant(s)

HWANG ET AL.

Examiner

Saba Tsegaye

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-21,23-27 and 50-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17,20,21 and 24-27 is/are allowed.
- 6) ☒ Claim(s) 14,18,19,23 and 50-64 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed on 09/21/04. Claims 14-21, 23-27 and 50-64 are pending. Claims 17, 20, 21 and 24-27 are allowed. Claims 15 and 16 are objected; and claims 14, 18, 19, 23 and 50-64 are rejected.

Claim Rejections - 35 USC § 102

2. Claims 14, 18, 19, 23, 53-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Chater-Lea (US 5,822,314).

Regarding claims 14 and 23, Chater-Lea discloses a method of processing signals using medium access control sub-layers in a communications system which has a plurality of mobile terminals and a base station, the medium access control sub-layers being respectively provided in the mobile terminals (25) and base station (21), the method comprising:

performing, in each of the medium access control sub-layers, self-basic functions or functions associated with upper layers (MM, MLE, LLC) or a lower layer (Physical layer) of the mobile terminals (25) and/or the base station (21), the performing step being performed if signal processing operations of a corresponding one of the mobile terminals (25), of the base station (21), or between the corresponding mobile terminal and the base station are requested (column 5, lines 11-67); and

performing a synchronization information of system information broadcasting control operation between the corresponding mobile terminal and the base station, the step of performing the broadcasting control operating including (column 5, line 55-column 6, line 10):

Art Unit: 2662

sending time information, system information and paging information from the base station to the corresponding mobile terminal if the broadcasting control operation between the corresponding mobile terminal and the base station is requested (column 6, lines 39-45); and

receiving the time information, system information and paging information from the base station and transferring a synchronization request message or system information update requested message to the lower layer of the corresponding mobile terminal (column 6, lines 45-59).

Regarding claim 18, Chater-Lea discloses the signal processing method, further comprising:

performing a control information/user information request operation of the corresponding mobile terminal (25) or base station (21), the step of performing the control information/user information request operating including:

sending a control information/user information request message from a specific one of the upper layers of the corresponding mobile terminal or base station to the base station or corresponding mobile terminal if control information and user information are requested by the specific upper layer of the corresponding mobile terminal or base station (column 6, lines 11-59).

Regarding claim 19, Chater-Lea discloses, in Figs. 3 and 4, a method of processing signals using MAC sub-layers in a communications system which has a plurality of mobile terminals and a base station, the MAC sub-layers being respectively provided in the mobile terminals and base station, the method comprising:

Art Unit: 2662

performing, in each of the MAC sub layers, self-basic functions or functions associated with upper layers (MM, MLE, LLC) or a lower layer (Physical layer) of the mobile terminals (25) and/or the base station (21), the performing step being performed if signal processing operations of a corresponding one of the mobile terminals (25), of the base station (21), or between the corresponding mobile terminal and the base station are requested (column 5, lines 11-67); and

performing a cipher control operation of the corresponding mobile terminal or base station, the step of performing a cipher control operation including:

transferring a cipher request message from a specific one of the upper layers of the corresponding mobile terminal or base station to the lower layer of the corresponding mobile terminal or base station if the cipher control operation of the corresponding mobile terminal or base station if the cipher control operation of the corresponding mobile terminal or base station is requested (column 6, line 3-24);

allowing the lower layer (MAC) to perform a cipher operation in response to the cipher request message from the specific upper layer (column 6, lines 11-20); and

transferring a result of the cipher operation from the lower layer to the specific upper layer (column 6, line 3-24).

Regarding claim 53, Chater-Lea discloses, in Fig. 4, a method for performing a ciphering operation, comprising:

providing information from an upper layer (MM, MLE, LLC) to a medium access control sub-layer (MAC) for protection of data (column 5, line 55-column 6, line 24);

performing ciphering of the data using at least one of the medium access control sub-layer and a physical layer (column 6, lines 11-24); and

providing a status of the ciphering operation to the upper layer (column 5, line 55-column 6, line 24).

Regarding claim 54, Chater-Lea discloses, in Fig. 3, the method, wherein the ciphering operation (31) is performed by a mobile terminal (25).

Regarding claim 55, Chater-Lea discloses, in Fig. 3, the method wherein the ciphering operation (19) is performed by a communication network (21).

3. Claims 50-52, 56-58 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al. (US 6,393,008).

Regarding claim 50, Cheng discloses a method for obtaining a condition of a channel or a cell by an upper layer from a medium access control sub-layer of a communication device comprising:

sending a measurement request from the upper layer to the MAC sub-layer (column 5, lines 44-48);

obtaining a measurement indicative of the condition of the channel or the cell by the MAC sub-layer (column 5, lines 28-33; lines 48-56); and

Art Unit: 2662

providing a result of the measurement to the upper from the MAC sub-layer (column 6, lines 16-46).

Regarding claims 51, 52, 57 and 58, Cheng discloses the communication system, wherein any one of the channels is a logical channel (column 2, lines 42-45; column 5, lines 44-52).

Regarding claim 56, Cheng discloses, in Fig. 1, a communication system having a plurality of mobile terminals and a communication network, each of the mobile terminals and the communication network comprising:

- a physical layer for receiving and sending information (110a,b);

- a medium access control sub-layer receiving services from the physical layer (106a,b);

and

- an upper layer to the medium access control sub-layer for receiving services from the medium access control sub-layer (104a,b), wherein

- the medium access control sub-layer performing a plurality of functions or providing a plurality of services and having a plurality of separate entities, each entity performing at least one corresponding different function (column 5, lines 44-65), and

- the plurality of separate entities of the medium access control sub-layer includes:

- a broadcast entity for handling a broadcast channel (column 6, lines 1-4),

- a common entity for handling a common channel (column 6, lines 1-4), and

- a dedicated entity for handling a dedicated channel (column 5, line 65-column 6, line 4).

Regarding claim 60, Cheng discloses the communication system, wherein the plurality of separate entities of the medium access control sub-layer further comprises a data entity of handling packet data transfer (column 6, lines 31-37).

Regarding claim 61, Cheng discloses the method wherein the communication device is a mobile terminal (column 5, lines 19-22).

Regarding claims 62 and 63, the method wherein the upper layer includes a radio resource control, which sends the measurement request and receives the result of the measurement (column 6, lines 32-35). It is understood that the RRC is an entity of the upper layer, since the upper layer sends the measurement request.

Regarding claim 64, Cheng discloses the method wherein the upper layer controls modification of a communication path (column 6, lines 32-35)

Claim Rejections - 35 USC § 103

4. Claim 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng in view of Chater-Lea.

Cheng discloses all the claim limitations as stated above, except for ciphering function.

Chater-Lea teaches a communication system using encryption algorithms.

It would have been obvious to one ordinary skill in the art at the time the invention was made to add a ciphering function, such as that suggested by Chater-Lea, in the system of Cheng

Art Unit: 2662

in order provide confidentiality on the digital radio link between mobile stations and base stations.

Allowable Subject Matter

5. Claims 17, 20, 21 and 24-27 are allowed.
6. Claims 15 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 09/21/04 have been fully considered but they are not persuasive. Applicant argues (Remarks, page 20-21) that Chater-Lea fails to disclose sending time information, system information and paging information. Examiner respectfully disagrees with Applicant contention. Referring to column 6, lines 39-45, Chater-Lea clearly discloses sending time information. BS transmits broadcast information 22; see fig. 3, and col. 4, lines 51-54. Broadcast information is, as it is known to one ordinary skill in the art, contains system information and registration parameters.

Further, Applicant argues that Chater-Lea does not disclose transferring a synchronization request message or system information update requested message to the lower layer of the corresponding mobile terminal. Examiner respectfully disagrees with applicant assertion. Chater-Lea shows, in Fig. 4, a block diagram of a protocol stack of the communications system. The MLE is responsible for passing control information received from

Art Unit: 2662

MM and higher layers down the protocol stack to the LLC and vice versa. Therefore, synchronization request message or system information update requested messages are transferred to the lower layer accordingly.

Regarding claim 19, Applicant argues that Chater-Lea does not disclose the transferring of a cipher request message from a specific one of the upper layers, allowing the lower layer to perform the ciphering operation and transferring a result of the ciphering operation from the lower layer to the specific upper layer. Chater-Lea discloses that first the upper layer uses authentication functions to generate a derived cipher key, which will be used in the encryption process. Second the upper layer sends a message to the lower layer to start operation of the encryption process. It is clear that the lower layer transfers the result of the ciphering operation in order the upper layer to send a message to start the encryption process.

Regarding claim 50, Applicant argues that Cheng fails to disclose sending a measurement request from the upper layer to the medium access sub-layer, or providing a result of the measurement request to the upper layer. Examiner respectfully disagrees with Applicant contention. Cheng discloses that the MAC layer function requests supplemental channels as needed to the packet request received from link layer. In response to receiving the packet data, the MAC layer determines whether a traffic channel is established or not. If it has not been established the MAC layer function requests supplemental channels (column 6, lines 31-37). It is understood that the result of the measurement request is provided to the upper layer since the measurement request received from the upper layer, as stated above. Cheng discloses, in Figs. 1

Art Unit: 2662

and 3, the OSI layer in both a mobile station and a base station. The upper layer represents the source and the destination of input for circuit switched voice and data calls and data packets for packet switched calls. The application layer monitors the BS and the mobile station. All the requests start at the upper layer. Fig. 3 shows a full duplex connection therefore data is going in both directions. Data starts and ends at the application layer wherein the data and control signals comes from a higher layer and data and status received at the lower layer is sent to the high layer to complete the communications.

Regarding claim 56, Applicant argues that Cheng does not disclose a plurality of separate entities of the MAC sub-layer. Examiner respectfully disagrees with Applicant assertion. Cheng clearly disclose a broadcast entity, a common entity and dedicated entity. It is respectfully submitted that the pending claims as they currently stand read in the Chang reference.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2662


however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (571) 272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
February 2, 2005


JOHN PEZZLO
PRIMARY EXAMINER

Best Available Copy

Organization **TC 2600** Bldg./Room **Jeff**
U.S. DEPARTMENT OF COMMERCE
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
IF UNDELIVERABLE RETURN IN TEN DAYS
OFFICIAL BUSINESS

AN EQUAL OPPORTUNITY EMPLOYER

7590
Flesher & Kim, LLP
14500 Avion Parkway
Suite 125
Chantilly, VA 20151

024 NIXIE

2068 1 06 02/11/05
RETURN TO SENDER
NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD
RETURN TO SENDER

RECEIVED
FEB 17 2005
TECHNOLOGY CENTER 2800



UNITED STATES POSTAGE
U.S. OFFICIAL MAIL
PENALTY FOR
PRIVATE USE \$500
02 14
0004204055 FEB 07 2005
MAILED FROM ZIP CODE 72314
\$ 01.06⁰⁰